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ABSTRACT

The Early Literacy Intervention Grant Program (ELIGP) supports training in Reading Recovery and provides grants for Other Early Literacy Interventions (OELI) in Indiana's elementary schools. This study examined the impact of funding on urban elementary schools, using surveys of funded and comparison schools in 1997-98, 1998-99, and 1999-2000. When the effects of types of funding were examined in regression analyses, the findings were: Reading Recovery funding and OELI funding were associated with lower retention rates in urban schools in Indiana; Connected-Text Approaches to literacy instruction, which are integral to Reading Recovery and other interventions, were also associated with lower retention rates; having Certified Specialists (i.e., trained Reading Recovery teachers) was associated with lower special education referral in urban schools; and book distribution to parents and paired reading between parents and children were associated with lower special education referral in urban schools. When the effects of the types of interventions that schools implemented were examined in a regression analysis, the findings were: Literacy Collaborative (a program that combines Reading Recovery with classwide reform) was associated with lower retention rates (grades 1-3) in urban schools; and Certified Specialists (i.e., Reading Recovery) were associated with lower special education referral rates and retention rates in urban schools. These findings indicate that the ELIGP has had a significant, measurable impact on educational outcomes in urban schools in Indiana. They indicate that ELIGP has contributed to the effectiveness and efficiency of urban education in the state. Contains 3 tables of data and 35 references. (Author/SR)

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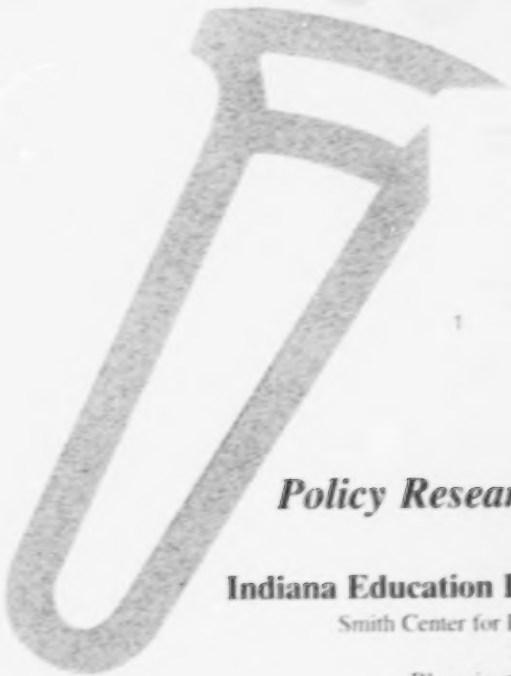

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Research-Based Reading Reforms: The Impact of State-Funded Interventions on Educational Outcomes in Urban Elementary Schools[1]

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Abstract

The Early Literacy Intervention Grant Program (ELIGP) supports training in Reading Recovery and provides grants for Other Early Literacy Interventions (OELI) in Indiana's elementary schools. This study examines the impact of funding on urban elementary schools, using surveys of funded and comparison schools in 1997-98, 1998-99, and 1999-2000. When the effects of types of funding were examined in regression analyses, the findings were:

- Reading Recovery funding and OELI funding were associated with lower retention rates in urban schools in Indiana.
- Connected-Text Approaches to literacy instruction, which are integral to Reading Recovery and other interventions, were also associated with lower retention rates.
- Having Certified Specialists (i.e., trained Reading Recovery teachers) was associated with lower special education referral in urban schools.
- Book distribution to parents and paired reading between parents and children were associated with lower special education referral in urban schools.

When the effects of the types of interventions that schools implemented were examined in a regression analysis, the findings were:

- Literacy Collaborative (a program that combines Reading Recovery with class-wide reform) was associated with lower retention rates (grades 1-3) in urban schools.
- Certified Specialists (i.e. Reading Recovery) were associated with lower special education referral rates and retention rates in urban schools.

These findings indicate that the ELIGP has had a significant, measurable impact on educational outcomes in urban schools in Indiana. They indicate that ELIGP has contributed to the effectiveness and efficiency of urban education in the state.

Research-Based Reading Reform: The Impact of State-Funded Interventions on Educational Outcomes in Urban Elementary Schools

With passage of the *Reading Excellence Act*, many states now have the opportunity to develop programs that support local efforts to improve early reading. It has long been known that young children who attend urban schools are at greater risk of not learning to read compared to students attending other types of schools (Slavin, 1991; Snow, Burns, & Griffith, 1998). However, there is little agreement about what types of reading interventions work best in urban schools. Much of the research receiving attention from policymakers has emphasized explicit approaches to instruction (e.g., Foorman, Fletcher, Francis, Mehta, & Schatschneider, 1998) and has been criticized because it promotes political agendas (Allington & Woodside-Jiron, 1999) and uses biased research methods (Taylor, Anderson, Au, & Taffy, 2000). While the researchers whose research, funded by the National Institute of Child and Human Development, is at the center of the storm have defended their methods and arguments (Foorman, Fletcher, Francis, & Schatschneider, 2000; Mathes & Torgesen, 2000), the whole controversy creates ambiguity and uncertainty for reformers in states and urban districts. Specifically, the following questions merit consideration in states and urban school districts:

- Should urban schools follow the path toward adopting explicit approaches that emphasize phonological awareness, an approach that is widely advocated by the conservative politicians who are advocates for fundamental reform?
- Should urban schools adopt research-based interventions with comprehensive designs and an established research base (e.g., Success for All or Reading Recovery)?

- Should states provide funds to urban schools, as a means of encouraging them to research the options that they think will work best in their setting?

Such questions must be considered when states design interventions aimed at improving early reading opportunities for urban school children. In this chapter, we use a database on early reading programs in urban schools in Indiana to examine the impact of state-funded interventions on rates of special education referrals and retention in early primary grades. These outcomes are closely linked to the success of schools in teaching early reading skills. First, we review the claims about early reading interventions made by various education reformers in early reading. Then we describe the research method we used in this analysis and present the results. We conclude by examining the claims of various reformers.

A Critical Review

While the idea of research-based reform sounds compelling, it can be difficult in an area like early reading to discern the types of reforms that merit consideration by local schools. A first step in untangling this knot involves examining the specific claims made by various types of reforms. Three types of claims are used in the research and policy literatures:

- Claims made by researchers about methods or combinations of methods that can improve early reading opportunity.
- Claims made by advocates of specific reforms that argue for a particular combination of program features, organized in cohesive programs, that are intended to improve early reading opportunity.

- Claims by policymakers for specific program approaches (e.g., requiring a particular method [e.g. phonics] for all schools versus categorical grant funding).

Researchers' Claims

The debates about early reading instruction are situated along a continuum with two poles: one that emphasizes meaning and context and another that emphasizes letter-sound relationships, or phonics (Chall, 1967). In the current context, much of the controversy centers around two arguments.

Perhaps the most widely cited research on phonological awareness and the alphabetic principle is by Barbara Foorman and her colleagues (Foorman, Fletcher, Francis, & Schatschneider, 1998). Recently, in response to critics, Foorman and her colleagues summarized their argument:

> However, we do maintain that there are some instruction principles that teachers and schools can use to enhance the reading achievement of at-risk children, and that it makes sense to demonstrate effective implementation of these instructional principles before investing in more complex solutions. (Foorman, Fletcher, Francis, & Schatschneider, 2000, p. 27)

Thus, while Foorman and her colleagues do not explicitly oppose comprehensive approaches to early reading improvement, they do argue for a specific method as a first priority. They base this argument on research that found:

> Controlling for differences in age, ethnicity, and verbal IQ, we found that children in the direct code (DC) approach improved in word reading at a faster rate and had higher word recognition skills in April than children receiving the implicit

> code (IC) approach (either research-based IC or district's standard IC). More importantly, children in *all* instructional groups with higher phonological processing scores in the beginning of the year demonstrated improvement across the year. (p. 29)

Thus, this argument rests on research that shows students who have instruction in direct coding learn to read words faster and that students who have skills in phonological processes learned to read faster. Based on these findings, Foorman and her colleagues conclude that schools should first emphasize direct instructional approaches.

There is a large array of counter arguments on early reading. One researcher who has recently received wide attention, Barbara Taylor and her colleagues (Taylor, Anderson, Au, & Taffy, 2000) argue that the Foorman research overlooked the context of education in the schools in which Foorman's research was situated. Specifically, they argue:

> Literacy research documents an array of practices important for struggling beginning readers. ... These practices influence systematic instruction in word recognition, carefully selected texts, repeated reading, guided writing, regular assessment of pupil progress, extra time in reading, one-on-one tutoring, strong home connections, and ongoing staff development. (p. 24)

This argument has two specific components. One component is that the specific practices that are emphasized are closely aligned with a holistic approach emphasizing a literature-rich approach to early reading instruction. A second component of their argument is that comprehensive intervention is needed rather than an approach that emphasizes a single method first, such as direct instruction.

There is a clear contrast between these two positions. One argument is that direct instruction is of primary importance and should be implemented before other approaches are tried (e.g., Foorman, Fletcher, Francis, & Schatschneider, 1998, 2000). The counter argument is that comprehensive approaches to intervention are appropriate (Taylor, Anderson, Au, & Taffy, 2000). Thus the claims of the two camps have clear and direct policy implications.

The Claims of Reform Advocates

Much of the research on early reading interventions has been conducted by advocates of specific reforms or by evaluators of these reforms. This complicates the situation facing urban educators who are interested in choosing a research-based intervention that works for their school. It is important that school leaders understand the features included in specific reforms and the confirmatory research base underlying each one. The implicit claim of most reading reforms is that implementation of the reform can improve early reading, as well as reduce the number of students who are retained or referred for special education services. Therefore, it is important that schools consider the features of reforms, to see if they complement the instructional methods they use. Five of the reforms that have well-defined, comprehensive approaches to early reading intervention are outlined below, along with descriptions of the types of services available to schools in Indiana.

Reading Recovery is a comprehensive approach to early reading that emphasizes one-on-one tutoring. In Indiana, Purdue University provides training for teachers interested in Reading Recovery. The state-funded training for teachers interested in Reading Recovery through the Early Literacy Intervention Grant Program (ELIGP) and

Title I paid the direct operational costs in some of the schools that chose this option. It emphasizes:

- Ongoing professional development for reading specialists; uses a Vygotskian developmental philosophy;
- Involvement of parents in reading with their children;
- Using meaning in context to teach phonemes (rather than direct decoding), along with aligned drills and creative method; and
- A sequence of literature books to promote the development of reading skills by students who are at risk of not learning to read (Bardzell, 1999b).

A confirmatory research base indicates that children who complete the program make normal process in their education (Askew & Frasier, 1994; Lyons, 1994, Pinnell, Lyons, DeFord, Bryk, & Seltzer, 1994; Pinnell, DeFord, & Lyons, 1988). However, one set of researchers found that including more direct instruction within Reading Recovery improves the speed at which students complete the program (Iverson & Tunmer, 1993), a finding that has created controversy for the proponents of this intervention method.

First Steps is a comprehensive classroom-wide intervention that was chosen by some schools applying for school-wide grants through Indiana's ELIGP. An intervention method developed originally in Australia, First Steps:

- Has options for ongoing support and networking available in the United States;
- Emphasizes a developmental approach and student empowerment;
- Provides training for parents in literacy instruction;

- Uses holistic and literature-rich approaches, but includes phonics in some versions of the intervention;
- Uses systematic diagnostic procedures and formative evaluation, along with a literature-rich environment (Manoil, 1999).

Thus First Steps is an approach that is situated in the literature-rich tradition but that includes a number of systematic features that involve teachers in assessing the progress children make in learning to read. While indicating that First Steps has an impact on students, teachers, and schools (e.g., Australian Council for Education Research, 1993a, 1993b; Deschamp, 1995), the research is largely descriptive.

Four Blocks is a classroom-wide intervention developed by Cunningham (1991) that strikes a balance between holistic and direct methods. This method includes:

- A philosophical approach that emphasizes both phonological awareness and student empowerment;
- Both literature-rich and direct approaches to early literacy instruction; and
- Basal readers and a literature-rich environment. (Manoil & Bardzell, 1999)

In the form originally proposed by Cunningham, Four Blocks did not include professional development or parental involvement. This program does have modest confirmatory research (Cunningham, Hall, & Defee, 1991, 1998). The Indiana Department of Education has offered workshops on Four Blocks. In addition, some schools have received grants through ELIGP to implement the program.

Literacy Collaborative is a new classroom-wide reading intervention designed to complement Reading Recovery. In Indiana, Purdue University provides ongoing professional development in support of the Literacy Collaborative and a few schools have

received funding for this intervention through ELIGP. The program includes the following features:

- University training for both pullout (through Reading Recovery) and ongoing professional development in support of Literacy Collaborative;
- A philosophy that is developmental and emphasizes student empowerment and creating learning communities;
- A comprehensive approach to instruction that includes diverse writing, oral, and decoding methods; and
- A comprehensive, literature-based and systematic curriculum for all students in grades 1-3 (Bardzell, 1999a).

Literacy Collaborative has only recently been developed by Ohio State University (1998) and lacks any confirmatory research base. However, initial studies of implementation in Indiana indicate that the method promotes improvement in student outcomes (St. John, Manset, Chung, Simmons, & Musoba, 2000).

Success for All is a comprehensive school-wide intervention approach (Slavin, 1991) that has a well-developed early literacy component. This well-documented method includes the following features:

- Systemic ongoing professional development and support;
- A developmental approach that emphasizes phonological awareness and whole language;
- An emphasis on building parent awareness and skills development;
- A systematic approach to instruction that emphasizes cooperative learning as a means of teaching decoding in both explicit and meaning-oriented ways; and

- A balanced approach that emphasizes classroom-wide activities, small groups, and pullout. (Bardzell, 1999c)

The research on the effects of Success for All is extensive. Most of the research uses specially selected comparison schools and word recognition tests (e.g., Madden, Slavin, Karweit, Donlan, & Wasik, 1991; Madden, Slavin, Karweit, Livermon, & Donlan, 1989), although there is also some confirmatory research by independent researchers (Ross & Smith, 1994).

The outline of reforms above illustrates the array of comprehensive approaches to early reading reform available to urban schools, if they have funding. Some emphasize pullout, others classroom-wide interventions, and still others combine approaches. The reforms take different approaches to instruction in decoding, the topic that underlies the debate among researchers outlined above. Reading Recovery, Literacy Collaborative, and First Steps emphasize a meaning-oriented approach to teaching decoding, an approach Foorman and colleagues (Foorman, Fletcher, Francis, & Schatschneider, 2000) strongly criticized. In contrast, Success for All and Four Blocks take a balanced approach, emphasizing context-free decoding, the approach Foorman and colleagues (Foorman, Fletcher, Francis, & Schatschneider, 2000) favor.

Political Claims

Two policy paths are evident in the latest round of policy conversations that consider the research base on reading. One approach, adopted by Texas, Washington, California, New York, and Wisconsin, has been to require the teaching of phonics (Allington & Woodson-Jiron, 1999; Taylor, Anderson, Au, & Taffy, 2000). This approach to policy takes the claim of Foorman, Fletcher, Francis, Mehta, &

Schatschneider (1998) quite literally. That is, these researchers essentially claim that direct phonics instruction is a necessary first step and legislators in these states have taken action, requiring this instructional approach. The implicit claim taken in this approach is that requiring all schools to use an explicit approach to phonics instruction will increase the number of students who learn to read and make normal educational progress.

An alternative approach is also now available to states to provide funding to schools for comprehensive reading interventions. This approach is being used in Kentucky, for example, as part of the state-funded program using federal funds from the *Reading Excellence Act*. In Indiana, the Early Literacy Intervention Grant Program (ELIGP) has used annual categorical grants to fund reading interventions in schools since 1997. One component of the program funds teachers seeking training for Reading Recovery. The other component includes a wide variety of interventions categorized as Other Early Literacy Interventions (OELI). The implicit claim of categorical grant programs is that comprehensive interventions can promote educational progress.

Research Approach

This paper presents an empirical study of the impact of ELIGP in urban schools, adapting a method developed from a statewide study of the intervention program (St. John, Manset, Hu, Simmons, & Michael, 2000). Our purpose in conducting this study is to untangle evidence related to the three types of claims outlined above.

We used three years of survey data on schools in Indiana, collected as part of a comprehensive evaluation of the Early Literacy Intervention Grant Program in Indiana.

Below we describe the survey we used, the logical model used in the study, and the instruction and related factors developed from the longitudinal study.

Survey and Response

The Early Literacy Intervention Survey[2] included questions about the types of reading programs that were implemented, amount of time per day spent on reading, features of the early reading program, number of students referred and retained, and enrollment data that could be used to impute special education referral and retention rates. In addition, we had access to a state-level database with information on test scores.

The survey assessed the frequency of use of nine organizational and structural features (ability grouping, basal readers, child-initiated learning centers, independent reading, one-on-one tutorial, pullout instruction, small groups, systematic evaluation, and trade books). It also assessed the frequency of use of ten classroom instructional methods (Big Books, cooperative learning, creative writing and/or essays, drama, emergent spelling, paired reading, phonics, reading aloud, reading drills, and worksheets/workbooks). For these frequency-of-use questions, survey participants were asked to respond using a five-point scale from 1 for "never" to 5 for "everyday" for both the current year and the prior year by grade level (K, 1, 2, 3). The survey also asked whether five types of professional development processes (certified training, certified specialist, in-service workshops, networking, and opportunity for collaboration) and five features related to parent involvement (book distribution, family literacy, paired reading, parent conference, and parent volunteers) were used in kindergarten through grade three.

[2] Copies of the Survey can be obtained on request from the Indiana Education Policy Center. A simplified version of the instrument that can be used to survey teachers is available on-line (St. John, Manset, & Michael, 1999)

This study reports analyses for three years of surveys of funded and comparison schools. The overall response rate across the three years was 61%. Comparison schools were half as likely to be surveyed as funded schools. Therefore, comparison schools were weighted by 2 to adjust for the probability of being surveyed. The study uses a sub-population of schools located in urban school districts.

Statistical Methods

The study used descriptive statistics, factor analysis, and multiple regression. Descriptive statistics were used to describe the population characteristics.

A factor analysis (principal components analysis with varimax rotation) was performed using SPSS (version 10.0) for 19 variables related to instructional and classroom program features for the entire population. Specifically, the average Likert score for each of the three grades (1-3) was imputed for the 19 program features on the survey related to instruction and structure/organization. Missing items were replaced with mean values. A factor-loading minimum of .40 was used for inclusion of a variable in interpretation of a factor, and only factors with eigenvalues greater than 1.0 were interpreted.

Ordinary least squares (OLS) regression was used to examine the influence of predictor variables on two outcomes. We present R^2, plus three levels of significance (.01, .05, and .10) for each predictor variable. Since .1 is only a moderately significant association, we make note of this moderate association in the text, so the reader will not place undue emphasis on this statistical relationship.

Model Specifications

We have two versions of the multiple regression models, one assessing type of funding and the other assessing type of intervention. In addition, we consider two distinct outcomes with each mode: rate of special education referral and rate of retention in grade level. Initially, we used sequential regressions, adding blocks of related variables for each outcome. The blocks of variables included:

- *School Characteristics*: The average ISTEP+ score, the percentage of students receiving free or reduced lunch, the percentage of minority students, and school locale: urban or rural.
- *Funding Type or Intervention Type*: In the analyses of funding types, we considered Reading Recovery (RR), OELI-1-3 (an OELI intervention in grades 1 through 3), OELI-K (OELI in kindergarten), OELI-FDK (an OELI intervention for full-day kindergarten), and OELI-preK (an OELI intervention for pre-kindergarten). In the analysis of intervention types, we considered Reading Recovery[3], Success for All, Literacy Collaborative, Full-Day Kindergarten, First Steps, Even Start, Accelerated Schools[4], and Four Blocks Method. The two Type variables (funding or intervention) are not mutually exclusive.
- *Professional Development*: This variable designates whether each of the following is included in professional development: requiring reading teachers to be certified, bringing in certified specialists for training sessions, in-service

[3] This variable coding included schools with Reading Recovery whether or not they were funded through ELIGP.

workshops, opportunities for teachers to network with teachers in other schools, and opportunities for teachers to collaborate within the school on reading instruction.

- *Instruction and Related Factors*: For this factor, we included the scores on each of the nine structural/organizational features and ten classroom instructional methods.

Instructional and Related Factors

In order to reduce the large number of program features related to instruction and the organization of reading programs at the grade level, we performed a principal components factor analysis of the instructional and structural/organizational features. (The factor analysis is presented in St. John, Manset, Chung, Simmons, & Musoba, 2000.)

The *Connected-Text Approaches* factor includes independent reading, cooperative learning, creative writing, emergent spelling, paired reading (student-to-student), and reading aloud. Schools that make use of these methods combine techniques that engage students in the learning process.

The *Explicit/Direct Approaches* factor combines basal readers, phonics instruction, reading drills, and worksheets/workbooks. Schools that emphasize explicit approaches utilize systematic approaches to teaching the components of language and reading.

The *Child-Centered/Expressive Approaches* factor combines child-initiated learning centers, Big Books, cooperative learning, and drama. These instructional

[4] The ELIGP did not fund any Accelerated Schools, although this intervention type was discussed in documents disseminated through the program (St. John & Bardzell, 1999) and there were a few Accelerated

approaches place an emphasis on the development of the whole child and peer engagement among children.

The *Ability Group/Pullout Approaches* factor combines ability grouping, one-to-one tutoring, pullout instruction, and small groups. Schools that use these techniques place more emphasis on classifying children and accelerating the learning of some, while addressing developmental needs of others.

The *Trade Books Approaches* factor combines trade books and Big Books, but de-emphasizes basal readers. Schools that use this approach emphasize using texts that are literature-based and engaging for students, rather than emphasizing the structured elements of reading programs organized around increasing levels of difficulty.

Of these factors, the variables included in the Explicit/Direct Approaches factor are closely aligned with the direct approaches advocated by Foorman and colleagues (Foorman et al., 1998, 2000). The other factors would seem more closely aligned with the more comprehensive approaches advocated by Taylor and other reform advocates.

Limitations

This study has a few limitations that merit consideration by readers. First, our analyses consider school-related outcomes rather than individual outcomes. While most reading research focuses on individual students, we felt it was important for the funding agency to understand whether their funding influenced school-related outcomes. This approach, while unusual, is consistent with the ways school outcomes are frequently reported and appears appropriate for a policy study of this type.

Second, the survey queried respondents about program features of each grade level, rather than asking teachers to answer questions about their classrooms. We

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Schools in the State.

considered this approach appropriate for an initial test of the study methodology. In the future we plan to extend the method to include a survey of teachers, which would mean we could examine both school-level and classroom-level outcomes.

Third, we assumed that all schools in the funded and comparison groups had an equal probability of returning a survey. This assumption was necessary because of the statistical methods used here. This assumption is typical when researchers use survey responses in regression models.

Fourth, for consistency across studies, we used factor scores generated from an analysis of the entire population of schools in all locales. Since one of our aims is to compare this urban-schools analysis to a similar analysis of the entire population (i.e., St. John, Manset, Chung, Simmons, & Musoba, 2000), we decided it was most appropriate to use a consistent set of factors. However, the reader is cautioned that new factor scores were not calculated for this population.

Findings

Sample Characteristics

The characteristics for the 150 urban schools in the sample are presented in Table 1. The average special education referral rate for the schools surveyed was .05, with a standard deviation of .03. The average retention rate was .03 with a standard deviation of .03. In the average school in the sample, 44% of the students qualified for free or reduced lunch and 31% were minority.

TABLE 1. Descriptive statistics of the sample.

	Mean (%)[5]	S.D.
Outcome Variables		
Special education grade 1-3	.05	.03
Grade retention grade 1-3	.03	.03
% Passing ISTEP English/Language Arts Scale Score	.56	.17
School Characteristics		
ISTEP Reading Raw Score	32.63	2.84
% Free or Reduced Lunch	.44	.21
% Minority	.31	.28
ELIGP Funding Type[6]		
RR	26.0%	
OELI	17.0%	
OELI-K	1.3%	
PREK	1.3%	
Intervention Type[7]		
RR	40.0%	
Success for All	4.0%	
Literacy Collaborative	6.7%	
Full-Day Kindergarten	25.3%	
Even Start	1.3%	
Accelerated Schools	2.0%	
Four Blocks	12.7%	
Professional Development		
Certified Training	34.0%	
Certified Specialist Grade	37.3%	
In-Service Workshops	73.3%	
Networking	63.3%	
Opportunity for Collaboration	70.7%	
Parent Involvement		
Book Distribution	50.7%	
Family Literacy	28.7%	
Paired Reading (Parent-to-Child)	71.3%	
Parent Conferences	97.3%	
Parent Volunteers	55.3%	

Note: n=150; double weight was given to comparison schools.

[5] Percentages only are reported for dichotomous variables. Averages and standard deviations are reported when percentages are used as continuous variables.

[6] Schools not receiving ELIGP funding were the reference group.

[7] Schools having no or other interventions were the reference group.

A larger percentage of the sample was funded through Reading Recovery (26%) than through OELI-1-3 (17%) or the other types of programs. Further, a substantially larger percentage of the sample had Reading Recovery in their schools (40%) than were funded through ELIGP, indicating that many schools continued the program after the initial training year funded by the state program. In addition, Success for All (4%) and Literacy Collaborative (7%) were not widely used, while Full-Day Kindergarten (25%) and Four Blocks Method (13%) were moderately used. Since a relatively large percentage of schools had ongoing programs related to Full-Day Kindergarten and Four Blocks Method, it is apparent that schools found funding sources other than ELIGP to develop and maintain these programs. This illustrates why it was necessary to consider the impact of the types of programs, as well as the types of funding, in this analysis.

In-service workshops, networking, and collaboration were used in most Indiana schools, a pattern that is consistent with the state's commitment to support ongoing professional development (Bull & Buechler, 1996). In addition, most schools had multiple types of parent involvement.

The Impact of Funding Type

The analyses of the impact of funding types considered both referral rates and retention rates (Table 2). The two models are separately examined.

Referral Rates: Only one variable related to school characteristics was associated with referral rates. ISTEP+ scores in reading scores were significant and positively associated with referral rates, indicating schools with higher scores had more referral. In fact, it is possible that the pressure to raise test scores influences schools to refer more

Table 2. The effects of state-funded reading interventions on educational progress in urban schools: Standardized coefficients of predictors on special education referral rate and retention rate.

VARIABLES	Referral Rate		Retention Rate	
	Beta	Sig.	*Beta*	Sig.
School Characteristics				
ISTEP Reading Raw Score	.195*		.159	
% Free or Reduced Lunch	.121		.277***	
% Minority	.033		.273**	
ELIGP Funding Type[8]				
RR	.005		-.178**	
OELI-1-3	.061		-.175**	
OELI-K	.001		-.071	
PREK	.088		.031	
Professional Development				
Certified Training	.136		-.050	
Certified Specialist Grade	-.318***		-.118	
In-Service Workshops	-.042		.028	
Networking	.058		-.115	
Opportunity for Collaboration	.064		.096	
Parent Involvement				
Book Distribution	-.022		.004	
Family Literacy	-.213***		.154*	
Paired Reading	-.265***		.086	
Parent Conferences	.056		.083	
Parent Volunteers	-.056		.115	
Program Feature Factors				
Connected-Text Approaches	.184**		-.174**	
Explicit/Direct Approaches	.205**		-.061	
Child-Centered/Expressive Approaches	.057		.277***	
Ability Group/Pullout Approaches	-.131		.050	
Trade Books Approaches	.199**		-.022	
Adjusted R^2	.240		.271	

Note: n=150; * $p \leq .1$, ** $p \leq .05$, *** $p \leq .01$.

[8] Schools not receiving ELIGP funding were the reference group.

students have trouble learning to read.

None of the funding types were significant when we considered the impact of the four funding types. However, before we conclude funding made no difference, we also need to consider the impact of intervention type because teachers were in training during the funding year.

One variable related to professional development was significant. Having a certified specialist was negatively associated with referral. This suggests that having a specialist who is already certified in Reading Recovery or some other type of reading method reduces special education referral.

Two variables related to parent involvement were significant. Having a family literacy program (i.e., teaching parents to read) and paired parent-child reading were both negatively associated with referral, indicating these methods increase the likelihood children would learn to read sufficiently well to remain in the regular classroom.

Finally, three of the instruction and related factors were significant. Connected-Text Approaches, Explicit/Direct Approaches, and Trade Books Approaches were associated with higher referral rates. This means that none of the combinations of program features that emerged in the analysis actually reduced referral rates in urban schools.

Retention Rates: Two variables related to school characteristics were significant. The percentages of minority students and of students on free and reduced lunch were significant and positively associated with retention rates. While prior research clearly indicates that poverty and urban locales are associated with failure (Snow et al., 1998), it is also important to note that this pattern also holds for schools within urban districts.

Two funding type variables were significant. Having a teacher funded through Reading Recovery and having an OELI-1-3 intervention was associated with lower retention rates. This is an important finding because it indicates that the interventions funded through ELIGP improved educational opportunity in urban school districts.

One of the variables related to parent involvement was significant. Family literacy was positively associated with retention. Since family literacy programs are more frequently offered in schools with more under-educated, language minority families, it is possible that other forces explain this association.

Two of the instruction and related factors were significant. Connected-Text Approaches were negatively associated with retention, indicating they help lower retention rates by enabling more students to learn to read. However, Child-Centered/Expressive Approaches were positively associated with higher persistence rates, indicating these methods were not as likely to help children make educational progress. This certainly merits further inquiry, given that there was a similar finding in the analysis of the entire population (St. John et al., 2000).

The Effects of Program Types

Since the amount of variance explained in the regression analyses of program types is higher than for funding type (compare Tables 2 and 3), it is possible to conclude that it is more appropriate to examine the impact of program type rather than funding source. However, several new insights emerge from comparing the two approaches.

Referral Rates: First, none of the variables related to school characteristics were significant (Table 3). The fact that test scores were no longer significant is intriguing and

Table 3. The effects of reading interventions on educational progress in urban schools: Standardized coefficients of predictors on special education referral rate and retention rate.

VARIABLES	Referral Rate		Retention Rate	
	Beta	Sig.	*Beta*	Sig.
School Characteristics				
ISTEP Reading Raw Score	.120		.048	
% Free or Reduced Lunch	.163		.244*	
% Minority	-.055		.223*	
Intervention Type[9]				
RR	-.137*		-.094	
Success for All	-.060		-.036	
Literacy Collaborative	-.009		-.146*	
Full-Day Kindergarten	.330***		.001	
Even Start	-.002		.029	
Accelerated Schools	.024		.194**	
Four Blocks	-.065		-.132	
Professional Development				
Certified Training	.142*		-.052	
Certified Specialist Grade	-.385***		-.208**	
In-Service Workshops	-.007		.044	
Networking	.026		-.151	
Opportunity for Collaboration	.103		.051	
Parent Involvement				
Book Distribution	-.062		.049	
Family Literacy	-.173**		.167**	
Paired Reading	-.216**		.102	
Parent Conferences	.060		.094	
Parent Volunteers	-.078		.126	
Program Feature Factors				
Connected-Text Approaches	.152*		-.123	
Explicit/Direct Approaches	.082		-.091	
Child-Centered/Expressive Approaches	.038		.302***	
Ability Group/Pullout Approaches	-.104		.025	
Trade Books Approaches	.230***		-.008	
Adjusted R^2	.317		.418	

Note: n=150; * $p \leq .1$, ** $p \leq .05$, *** $p \leq .01$.

[9] Schools having no or other interventions were the reference group.

merits consideration because it indicates a confounding relationship with variables related to program types.

Second, two of the program types were significant and associated with referral rates. Interestingly, Reading Recovery was associated with lower referral rates. Given that more programs with ongoing and fully implemented Reading Recovery projects were included in this analysis, it is apparent that once these programs have matured, they have a more substantial influence on reducing special education referral.

Full-Day Kindergarten was associated with higher referral rates. Again, this analysis picks up more schools with ongoing and fully implemented programs. This relationship is difficult to explain from the evidence here, but could be attributable to a confounding relationship with test scores. This possibility merits further exploration, as to other possible explanations.

Third, two variables related to professional development were significant. Having a certified specialist continued to be significant and negatively associated with referral, indicating that the presence of trained reading specialists—a development more likely in schools with mature Reading Recovery Programs—reduced the need to referral. Having certified training was associated with higher referral rates. Since Reading Recovery was the primary certified training opportunity, it seems likely that this variable indicates a teacher in training (i.e., a funded Reading Recovery project). This further suggests that more mature Reading Recovery projects have more substantial effects in urban schools.

Fourth, two variables related to parent involvement were also significant. Family literacy and paired reading continued to be significant and negatively associated with special education referral.

Finally, only two variables related to instructional factors were statistically significant. Connected-Text Approaches and Trade Books Approaches continued to be statistically significant and positively associated with referral.

However, Explicit/Direct Approaches were no longer significant, indicating a confounding relationship between intervention type and this factor. This is important because it indicates that the ways various types of instructional programs interact within a comprehensive approach to early reading may be more important than any single instructional approach, supporting the argument of Taylor and colleagues (Taylor, Anderson, Au, & Taffy, 2000).

Retention Rates: First, the percentages of minority students and of students on free and reduced lunch continued to be positively associated with retention rates, indicating that program types had little interaction with these variables. This pattern was also evident in the analysis of the entire population (St. John, Manset, Chung, Simmons, & Musoba, 2000).

Second, two program types were significant. Literacy Collaborative was significant and negatively associated with retention. This is important for a couple of reasons. First, the category Literacy Collaborative was reserved for schools that were working with the Purdue Reading Recovery project. It is apparent that a combination of Reading Recovery and a comprehensive and closely aligned school-wide process represent a powerful force for change. In addition, we think it is important that these schools have ongoing support with a partnering university.

Accelerated Schools was significant and positively associated with retention. No Accelerated Schools received funding through ELIGP. Further, the few Accelerated

Schools included in this study were not affiliated with either the national service center or the regional center. Only one school in Indiana now has state funding through Comprehensive School Reform and it was not included in the study. Therefore, the finding in this study that Accelerated Schools was associated with higher retention rates could be an artifact of inadequate funding or other factors.

Interestingly, Success for All was not significant in urban schools. In the analysis of the effects of program types of retention rates for all schools, we found that Success for All was associated with lower retention (St. John, Manset, Chung, Simmons, & Musoba, 2000). This finding is important because the effects of interventions may depend on context. Success for All was originally created as an intervention for urban schools, but in this analysis it was not significant in urban schools. This may be an artifact of the different sources of funding, or it could be attributable to partial implementation or insufficient funding. More probing of this question is needed.

Third, consistent with the analysis of funding types, one variable related to parent involvement was significant. Having a family literacy program was associated with higher retention rates.

Finally, one instruction and related factor was significant. Child-Centered/Expressive Approaches continued to be significant and positively associated with retention rates.

It is also important to note that Connected-Text Approaches were no longer significant and associated with lower retention rates. It appears that the effects of this variable are confounded by using program types rather than funding types to predict retention rates in urban schools. In the analysis of all schools, Connected-Text

Approaches were significant in the program types analysis (St. John, Manset, Chung, Simmons, & Musoba, 2000). Thus, it appears that there is a relationship between having a comprehensive intervention, possibly Literacy Collaborative, and lower retention rates in urban schools. Literacy Collaborative seems possible, both because of the emphasis on program features related to the holistic approach in this model (Ohio State University, 1998) and because this variable was significant and negative in the analysis above.

Conclusions

These analyses provide new insights into the impact of reading interventions. Below, we examine the empirical evidence in relation to the three sets of claims, then return to the policy questions in the introduction.

Reconsidering the Claims

Reseachers' Claims: These findings offer compelling evidence relative to the arguments advanced in the two schools of thought about early reading interventions. The Explicit Approaches factor did not influence reductions in either special education referral or retention rates. It is not clear that placing more emphasis on explicit instruction would help reduce the learning difficulties of school children in early grades.

There is, however, compelling evidence to suggest that comprehensive approaches to early reading improvement make a difference in the learning opportunities for urban school children. Specifically, having funded projects for both Reading Recovery and other literacy interventions (OELI-1-3) improved educational progress related to early reading. Funding comprehensive programs aimed at improving early reading appears to make a difference for urban school children.

Program Advocates' Claims: This study provides important evidence relative to the claims made by the advocates of reading reforms. Specifically, the holistic approaches used by Reading Recovery and the Literacy Collaborative seemed related to improvement in educational progress by urban school children. More generally, having funding through ELIGP for school-wide and classroom-wide reforms apparently helped schools improve student outcomes in urban schools.

The study also indicates that both funding and program maturity are important forces. In the case of Reading Recovery, there is evidence that mature programs had more substantial effects. In the case of Accelerated Schools, the lack of funding may have helped explain why this project was associated with higher retention rates.

Political Claims: These analyses suggest that requiring schools to implement any specific instructional approach would be shortsighted. There is certainly no evidence to suggest that requiring explicit instruction in phonics would improve student outcomes in urban schools.

However, there is strong evidence to support the idea that categorical funding for early reading interventions can improve educational outcomes in urban schools. Providing schools a chance to secure training and then implement Reading Recovery seems to make a difference. Further, providing funding for direct comprehensive reforms apparently made a difference, consistent with arguments by Taylor and colleagues (Taylor, Anderson, Au, & Taffy, 2000).

Making Informed Decisions about Early Interventions

These findings also help inform policy decisions about strategies for improving early reading in urban schools. Below we reconsider the questions noted in the introduction.

- *Should urban schools follow the path toward emphasizing explicit approaches that focus on phonological awareness, an approach that is widely advocated by the conservative politicians who are advocates for fundamental reform?*

This provides further insight into the debates about the merits of following the path toward explicit instructional approaches in urban schools. At the very least, this study suggests extreme caution is needed in following this path and, indeed, suggests an alternative approach may have merit.

- *Should urban schools adopt research-based interventions with comprehensive designs and an established research base (e.g., Success for All or Reading Recovery)?*

This study supports arguments advanced by Reading Recovery and by advocates of comprehensive research-based reforms. However, it does not confirm that Success for All is the most appropriate intervention method for urban schools. Indeed, the evidence here is more compelling for the new program, Literacy Collaborative, than for the more systematically studied Success for All. Apparently, the process of intervening to improve early literacy instruction in urban schools is more complex than is implied in the notion of adopting any single intervention method, or any combination of intervention methods, as *the* answer. These findings suggest that there are complex forces that influence the success of early literacy interventions in urban schools. We expect that the close

collaboration between Purdue University and schools with Literacy Collaborative projects was a factor in the relative success of this program. We also expect that the lack of support for the early Accelerated Schools in Indiana may have inhibited their success. Thus, there is reason to expect that university partnerships can help urban schools. There is also compelling evidence to suggest that well-designed categorical programs can have a substantial influence in urban schools.

- *Should states provide funds to urban schools, as a means of encouraging them to research the options that they think will work best in their setting?*

This study provides compelling evidence that the provision of categorical grants that encourage schools to develop well-defined proposals, which is the case with ELIGP in Indiana, is a workable approach to early literacy intervention. With the passage of the *Reading Excellence Act*, states now have the opportunity to develop comprehensive programs that encourage schools to research possible solutions and develop well reasoned proposals.

Such an approach can be a great deal of work for state officials. It requires developing rubrics that can be used to communicate with schools about possible intervention strategies and that encourage educators in schools to develop proposals. However, the evidence in this study at least suggests that encouraging this type of thoughtful activity in schools offers greater hope for improving schools than do the alternative approaches currently being used by policymakers.

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